

## CLAIMS

1        1. A system for tracking the location of a shipping container via communication  
2 with a satellite and a central server comprising:  
3            a central server;  
4            a portable detachable tracking unit comprising:  
5            an antenna that is capable of communication with both a GPS satellite and a  
6 two-way satellite;  
7            a processing device;  
8            a GPS receiver for receiving signals from the GPS satellite;  
9            a transmitter for transmitting information to the central server via the two-way  
10 satellite;  
11            a modem;  
12            a housing; and  
13            means for attaching and detaching the tracking unit to the shipping container.

1        2. The system of claim 1, in which the tracking unit has detecting means for  
2 detecting when it has been detached from a shipping container and communicating that  
3 information via the two-way satellite to the central server.

1        3. The system of claim 1, in which the tracking unit has detecting means for  
2 detecting when it has been tampered with and communicating that information via the two-  
3 way satellite to the central server.

1        4. The system of claim 1, in which the tracking unit also has a receiver for  
2 receiving communications from the two-way satellite.

1        5. The system of claim 1, in which the tracking unit further includes an internal  
2 power supply.

1           6. The system of claim 5, in which the internal power supply of the tracking unit  
2 is provided by one of a fuel cell and battery.

1           7. The system of claim 1, in which the tracking unit has a memory capable of  
2 receiving and storing geo-fencing information on the specified route to its destination and the  
3 processing device is programmed to determine if the tracking unit is outside of the geo-fence  
4 and to communicate that information to the central server via the two-way satellite.

1           8. The system of claim 1, in which the shipping container has at least one door  
2 and at least one locking bar for locking all doors with the tracking unit being attached to the  
3 locking bars so that the locking bars can not be unlocked without first detaching the tracking  
4 unit.

1           9. The system of claim 1, in which the shipping container has at least one door  
2 and at least one locking bar for locking all doors with the tracking unit being attached to the  
3 locking bars by least one clamp that clamps around a locking bar that prevents the tracking  
4 unit from moving up and down on the bar and the tracking unit is also directly attached to the  
5 shipping container so that the bars can not be moved to unlock the doors without detaching  
6 the tracking unit.

1           10. The system of claim 8, in which the tracking unit is attached to at least one  
2 locking bar by a special fastener that can not be released without using a special tool.

1           11. The system of claim 1, in which the antenna in the tracking unit is located in  
2 the vertical position in relation to the surface of the earth in order to better transmit and  
3 receive communications.

1           12. A portable detachable tracking unit for transmitting its location via  
2 communication with a satellite to a central server, said tracking unit being capable of being  
3 attached and detached from a shipping container, said tracking unit comprising:  
4           an antenna that is capable of communication with both a GPS satellite and a  
5 two-way satellite;  
6           a processing device;  
7           a GPS receiver for receiving signals from the GPS satellite;  
8           a transmitter for transmitting information to the central server via the two-way  
9 satellite;  
10           a modem;  
11           a housing; and  
12           means for attaching and detaching the tracking unit to a shipping container.

1           13. The portable detachable tracking unit of claim 12, which has detecting means  
2 for detecting when it has been detached from a shipping container and communicating that  
3 information via the two-way satellite to a central server.

1           14. The portable detachable tracking unit of claim 12, which has detecting means  
2 for detecting when it has been tampered with and communicating that information via the  
3 two-way satellite to a central server.

1           15. The portable detachable tracking unit of claim 12, in which the tracking unit  
2 also has a receiver for receiving communications from a two-way satellite.

1           16. The portable detachable tracking unit of claim 12, in which the tracking unit  
2 has an internal power supply.

1           17. The portable detachable tracking unit of claim 16, in which the internal power  
2 supply of the tracking unit is provided by one of a fuel cell and battery.

1           18.    The portable detachable tracking unit of claim 12, in which the tracking unit  
2 has a memory capable of receiving and storing geo-fencing information on the specified route  
3 to its destination and the processing device is programmed to determine if the tracking unit is  
4 outside of the geo-fence to and communicating that information to the central server via the  
5 two-way satellite.

1           19.    The portable detachable tracking unit of claim 12, in which the antenna is  
2 located in the vertical position in relation to the surface of the earth in order to better transmit  
3 and receive communications.

1           20.    The portable detachable tracking unit of claim 12, in which a cushioning  
2 material is placed between the back of the tracking unit and a door of the shipping container.

1           21.    A shipping container with at least one door and at least one locking bar for  
2 locking all doors and a portable detachable tracking unit, said tracking unit comprising:

3                 an antenna that is capable of communication with both a GPS satellite and a  
4 two-way satellite;

5                 a processing device;

6                 a GPS receiver for receiving signals from the GPS satellite;

7                 a transmitter for transmitting information to a central server via the two-way  
8 satellite;

9                 a modem;

10                a housing; and

11                means for attaching said tracking unit to the locking bars so that the locking  
12 bars can not be unlocked without first detaching the tracking unit.

1           22. A shipping container with at least one door with a built-in tracking unit for  
2 transmitting its location via communication with a satellite and a central server, said tracking  
3 unit comprising:

4                   an antenna that is capable of communication with both a GPS satellite and a  
5 two-way satellite;

6                   a processing device;

7                   a GPS receiver for receiving signals from the GPS satellite;

8                   a transmitter for transmitting information to a central server via the two-way

9 satellite;

10                   a modem; and

11                   means for determining when a door of the shipping container is open and  
12 means for communicating that information via the two-way satellite to the central server.

1           23. The shipping container and built -in tracking unit of claim 21 in which there  
2 are also means for determining when the tracking unit has been tampered with and means for  
3 communicating that information via the two-way satellite to the central server.

1           24. The portable detachable tracking unit of claim 12, in which the tracking unit  
2 further includes a battery that powers those components which need to be on to receive  
3 messages from the central server via the two-way satellite and to power a clock and to turn  
4 other electrical components on that are powered by another source of power, and a fuel cell  
5 that powers all components not powered by the battery.

1           25. A method of monitoring a shipping container during shipping from a shipping  
2 point to a destination via a portable detachable tracking unit, at least one satellite and central  
3 server, comprising:

4                 associating the shipping container with the portable tracking unit attached to  
5 the container in the central server;

6                 the tracking unit determining whether certain events have occurred or not on  
7 one of the shipping container and the portable detachable tracking unit or both, the tracking  
8 unit transmitting that information to the central server via the satellite; the tracking unit  
9 periodically determining its location via GPS satellites and transmitting that information to  
10 the central server via the satellite;

11                 determining whether the tracking unit is on course to its destination based  
12 upon this transmitted information according to a predetermined route or not; and

13                 generating a message concerning whether the tracking unit is on course or not  
14 and whether the certain event has occurred or not.

1           26. The method of claim 25, in which the certain event is that the tracking unit has  
2 just went off course.

1           27. The method of claim 25, in which the certain event is that the tracking unit has  
2 been detached from the shipping container.

1           28. The method of claim 25, in which the certain event is that the tracking unit has  
2 been tampered with.

1           29. A portable detachable tracking unit for transmitting its location via  
2 communication with a satellite to a central server, said tracking unit being capable of being  
3 attached and detached from a shipping container, said tracking unit comprising:  
4               an antenna that is capable of communication with both a GPS satellite and a  
5 two-way satellite;  
6               electronic means for receiving communications from the GPS satellite;  
7               electronic means for communicating with at least one two-way communication  
8 satellite;  
9               said electronic components being placed by an internal power source; and  
10               all of said components being housed in a housing that has means for attaching  
11 and detaching to a shipping container.

1           30. The portable detachable tracking unit of claim 29, which has means for  
2 showing the unauthorized detachment from a shipping container.

1           31. The portable detachable tracking unit of claim 29, which has means to shut  
2 down part of the electronic components and waking them up upon the occurrence of certain  
3 events or a command received from the central server.

1           32. The portable detachable tracking unit of claim 29, which has means to connect  
2 to a nearby computer with access to the tracking unit being programmed to only grant access  
3 pursuant to a secret code, said tracking unit being capable of being programmed by the nearby  
4 computer to carry out certain functions and to transmit certain information.

1           33. The portable detachable tracking unit of claim 29, in which a cushioning  
2 material is placed between the back of the tracking unit and a door of the shipping container.